

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A mobile Internet Protocol (IP) system, comprising:
 - a mobile node initially linked to a first foreign network;
 - a home agent receiving a set of data packets, which are supposed to be transmitted to said mobile node, said home agent being included in a home network of said mobile node;
 - a first foreign agent ~~initially~~ receiving said packets from said home agent and storing said packets in a first buffer of said first foreign agent, wherein said first foreign agent sends said stored packets to said mobile node if said mobile node continues to be linked to said first foreign network; and
 - a second foreign agent receiving said packets stored in said first buffer of said first foreign agent from said first foreign agent, and the second foreign agent storing said received packets in a second buffer of said second foreign agent if said mobile node is moved to a second foreign network from said first foreign network, the packets stored in the second buffer that are received from the first buffer include packets stored in the first buffer while the mobile node is linked to the first foreign network, said second foreign agent being included in said second foreign network.

2. (Original) The mobile IP system of claim 1, wherein said first foreign agent deletes said stored packets after sending said stored packets to said second foreign agent.

3. (Canceled)

4. (Previously Presented) The mobile IP system of claim 1, wherein said first foreign agent deletes said stored packets after sending said stored packets to said mobile node.

5. (Original) The mobile IP system of claim 1, wherein said buffer is coupled to said first foreign agent.

6. (Canceled)

7. (Previously Presented) The mobile IP system of claim 1, wherein said first foreign agent determines whether said mobile node is moved to said second foreign network by checking whether a notification message is received from said mobile node.

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8. (Currently Amended) A method of transmitting data in a mobile Internet Protocol (IP) network, the method comprising:

transmitting a set of data packets to a home agent of a mobile node, said mobile node being currently linked to a first foreign network having a first foreign agent;

sending said packets received by said home agent to said first foreign agent and storing ~~them~~ the packets in a first buffer of the first foreign agent;

the first foreign agent sending the stored packets to the mobile node if the mobile node continues to be linked to the first foreign network;

moving said mobile node from the first foreign network to a second foreign network having a second foreign agent;

sending said packets stored in said first buffer to said second foreign agent and storing the received packets in a second buffer of the second foreign agent if said mobile node is moved to the second foreign network from the first foreign network, wherein the packets stored in the second buffer that are received from the first buffer include packets stored in the first buffer while the mobile node is provided in the first foreign network; and

transmitting said packets stored in said second buffer to said mobile node.

9. (Original) The method of claim 8, wherein said first buffer is coupled to said first foreign agent.

10. (Original) The method of claim 8, wherein said second buffer is coupled to said second foreign agent.

11. (Previously Presented) The method of claim 8, further comprising deleting said packets stored in said first buffer after sending said packets stored in said first buffer to said second foreign agent.

12. (Canceled)

13. (Previously Presented) The method of claim 8, further comprising deleting said packets stored in said first buffer after transmitting said packets stored in said first buffer to said mobile node.

14. (Canceled)

15. (Currently Amended) A data routing method of a first foreign agent in a mobile Internet Protocol (IP) network, the method comprising:

receiving a set of data packets and storing them in a buffer;

determining a mobile node to which said packets are supposed to be transmitted;

storing packets in a first buffer of the first foreign agent in the first foreign network;

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the first foreign agent sending the stored packets to the mobile node if the mobile node is linked to the first foreign network;

determining if said mobile node moves to a second foreign network having a second foreign agent; and

storing the packets in a second buffer at the second foreign agent after the second foreign agent receives the packets and the mobile node has moved from the first foreign network to the second foreign network, wherein the packets stored in the second buffer that are received from the first buffer include packets stored in the first buffer while the mobile node is in the first foreign network.

16. (Previously Presented) The method of claim 15, further comprising deleting said packets stored in said first buffer after transmitting said packets stored in said first buffer to said second foreign agent.

17. (Canceled)

18. (Previously Presented) The method of claim 15, further comprising deleting said packets stored in said first buffer after transmitting said packets stored in said first buffer to said mobile node.

19. (Original) The method of claim 15, wherein said buffer is coupled to said first foreign agent.

20. (Canceled)

21. (Previously Presented) The method of claim 15, wherein said determining is performed by checking whether a notification message is received from said mobile node.

22. (Previously Presented) The method of claim 15, wherein an IP address of said second foreign agent is included in a notification message.

23. (Currently Amended) A mobile Internet Protocol (IP) method comprising:
receiving packets at a first foreign agent associated with a first foreign network;
storing said packets in a first buffer of the first foreign agent;
the first foreign agent sending the stored packets to a mobile node if the mobile node is linked to the first foreign network;

a second foreign agent receiving said packets stored in said first buffer of the first foreign agent from the first foreign agent and the second foreign agent storing the received packets in a second buffer of the second foreign agent if the mobile node moves to the second foreign network from the first foreign network, wherein the packets stored in the second buffer

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that are received from the first buffer includes packets stored in the first buffer while the mobile node is linked to the first foreign network.

24. (Canceled)

25. (Previously Presented) The method of claim 23, further comprising deleting said packets stored in said first buffer after sending said packets to said second foreign agent.

26. (Canceled)

27. (Previously Presented) The method of claim 23, further comprising:
sending said packets to a home agent; and
sending said packets from said home agent to said first foreign agent.

28. (Previously Presented) The mobile IP system of claim 1, wherein the home agent comprises a router of the home network of the mobile node.

29. (Previously Presented) The mobile IP system of claim 1, wherein the mobile node further registers to the home agent if the mobile node is moved to the second foreign network.

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30. (Previously Presented) The mobile IP system of claim 1, wherein upon determination that a notification message has been received from another foreign agent, said first foreign agent sends said stored packets to said first foreign agent and deletes said stored packets.

31. (Previously Presented) The mobile IP system of claim 30, wherein the notification message includes an IP address of the mobile node, an IP address of the first foreign agent and a care-of-address (COA) of the mobile node.

32. (Previously Presented) The mobile IP system of claim 31, wherein the COA represents an IP address of the second foreign agent.

33. (Previously Presented) The method of claim 8, further comprising sending a notification message from the mobile node to the first foreign agent when said mobile node moves from the first foreign network to the second foreign network, and wherein the notification message includes an IP address of the mobile node, an IP address of the first foreign agent and a care-of-address (COA) of the mobile node.

34. (Previously Presented) The method of claim 33, wherein the COA represents an IP address of the second foreign agent.

35. (Previously Presented) The method of claim 15, further comprising sending a notification message from the mobile node to the first foreign agent if said mobile node moves from the first foreign network to the second foreign network, and wherein the notification message includes an IP address of the mobile node, an IP address of the first foreign agent and a care-of-address (COA) of the mobile node, and the COA represents an IP address of the second foreign agent.

36. (Previously Presented) The method of claim 23, further comprising sending a notification message from the mobile node to the first foreign agent when said mobile node moves from the first foreign network to the second foreign network, and wherein the notification message includes an IP address of the mobile node, an IP address of the first foreign agent and a COA of the mobile node, and the COA represents an IP address of the second foreign agent.